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EXAMINER

DAY, HERNG DER

ART UNIT

PAPER NUMBER

2128

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/822,368	<b>Applicant(s)</b> DOBMEIER ET AL.	
	<b>Examiner</b> HERNG-DER DAY	<b>Art Unit</b> 2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-11 and 13-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-11 and 13-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

**1.** This communication is in response to Applicants' Amendment and RCE ("Amendment") to Office Actions dated November 26, 2007, and January 28, 2008, filed February 19, 2008.

**1-1.** Claims 1, 8, 11, and 21 have been amended. Claims 2 and 12 have been cancelled. Claims 1, 3-11, and 13-21 are pending.

**1-2.** Claims 1, 3-11, and 13-21 have been examined and rejected.

### ***Specification***

**2.** Applicants should use the metric (S.I.) units followed by the equivalent English units when describing the inventions in the specifications of patent applications. See MPEP 608.01(IV).

### ***Claim Rejections - 35 USC § 112***

**3.** The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**4.** Claims 1-10 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**4-1.** Claim 1 recites the limitation, "selecting components for the mat" at line 12 of the claim. However, in the "selecting various physical characteristics" step, the components to be included in the mat were already known.

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**4-2.** Claim 21 recites the limitation, “selecting components for the mat” at line 15 of the claim. However, in the “selecting physical characteristics” step, the components to be included in the mat were already known.

**4-3.** Claims not specifically rejected above are rejected as being dependent on a rejected claim.

### ***Recommendations***

**5.** Claim 10 recites the limitation, “the binder content by weight” in lines 1-2 of the claim. For clarification purposes, the Examiner suggests that “the binder content by weight” be replaced with “the binder content by percentage weight”.

**6.** Claim 18 recites the limitation, “the binder content by weight” in line 1 of the claim. For clarification purposes, the Examiner suggests that “the binder content by weight” be replaced with “the binder content by percentage weight”.

### ***Claim Rejections - 35 USC § 103***

**7.** The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**8.** Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al., U.S. Patent Application Publication No. 2003/0022583 A1 published January 30, 2003, in

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view of Cordova et al., U.S. Patent 5,343,796 issued September 6, 1994, and further in view of Gaa et al., U.S. Patent 4,681,802 issued July 21, 1987.

**8-1.** Regarding claim 1, Thomas et al. disclose a method for designing a fibrous non-woven mat production, the method comprising:

selecting various physical characteristics for at least some of the components to be included in the mat (as a function of varying fiber length, paragraph [0093]), [wherein one of the components comprises glass fiber];

obtaining empirical performance data relating to the mat based on the selected physical characteristics (Evaluation of the effects, paragraph [0090]; Two high performance fibers were evaluated. Kevlar 29, ... with lengths of 3 and 4 inches, paragraph [0082]), [wherein the empirical performance data comprises fiber dispersion];

developing a prediction equation for a performance characteristic of the mat based on the empirical performance data and the selected physical characteristics (Develop regression equations, paragraph [0093]);

calculating performance characteristics using the prediction equation, wherein ranges of at least some of the selected physical characteristics are used in the prediction equation (to predict ballistic resistance as a function of varying fiber length, ..., paragraph [0093]); and

selecting components for the mat based on the calculated performance characteristics (The high modulus fiber blend is advantageous in that the fiber only deformed the  $\frac{3}{4}$  inches prior to stopping the projectile in comparison to the  $2\frac{3}{4}$  inch penetration of the Kevlar, paragraph [0136]).

Thomas et al. fail to expressly disclose wherein one of the components comprises glass fiber. Nevertheless, Thomas et al. suggest the referred fibers can be substituted by any fibers having the desired properties for ballistic resistant purpose.

Cordova et al. disclose an armor system and assert at column 1, lines 58-68, “Ballistic resistant articles such as vests, helmets, hard and soft armor, structural members of helicopters and other military equipment, vehicle panels, briefcases, raincoats and umbrellas containing high strength fibers are known. Fibers conventionally used in these articles include aramid fibers such as poly(p-phenylene terephthalamide), graphite fibers, nylon fibers, ceramic fibers, high strength polyethylene fibers, e.g., SPECTRA.RTM., *glass fibers* and the like. For many applications, such as vests or parts of vests, the fibers are used in a woven or knitted fabric.”

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Thomas et al. to incorporate the teachings of Cordova et al. because, as suggested by Thomas et al., the referred fibers can be substituted by any fibers having the desired properties for ballistic resistant purpose and, as asserted by Cordova et al., glass fibers are conventionally used in the ballistic resistant articles.

Thomas et al. also fail to expressly disclose wherein the empirical performance data comprises fiber dispersion.

Gaa et al. disclose at column 2, lines 44-47, “The uniformity of the arrangement of chopped glass fibers and/or strands in the nonwoven, sheet-like mat of chopped glass fibers and/or strands contributes to the strength of the mat and to the ultimate end product.” In other words, fiber dispersion (i.e., the uniformity of the arrangement of chopped glass fibers) will affect the performance of the mat (i.e., contributes to the strength of the mat).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Thomas et al. to also incorporate the teachings of Gaa et al. (i.e., to consider the performance data of fiber dispersion in developing the prediction equation for a performance characteristic) because, as suggested by Gaa et al., fiber dispersion (i.e., the uniformity of the arrangement of chopped glass fibers) will affect the performance of the mat (i.e., contributes to the strength of the mat).

**8-2.** Regarding claim 5, Thomas et al. further disclose wherein the prediction equation is developed using a regression analysis (Develop regression equations, paragraph [0093]).

**9.** Claims 3-4 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Thomas et al., U.S. Patent Application Publication No. 2003/0022583 A1 published January 30, 2003, Cordova et al., U.S. Patent 5,343,796 issued September 6, 1994, and Gaa et al., U.S. Patent 4,681,802 issued July 21, 1987, as applied to claim 1, in view of Kajander, U.S. Patent 5,837,620 issued November 17, 1998.

**9-1.** Regarding claims 3-4 and 6-10, Thomas et al. fail to expressly disclose wherein the components comprise binder content and details of glass fiber and binder content. Nevertheless, Thomas et al. suggest the referred fibers can be substituted by any fibers having the desired properties for ballistic resistant purpose.

Kajander discloses a fiber glass mat and suggests at the first paragraph of the detailed description of the invention, "Mats of the present invention contain about 25-75 weight percent fibers and about 15-75 percent binder. The majority of the fibers are glass fibers. The glass fibers which can be used to make mats can have various fiber diameters and lengths dependent on the strength and other properties desired in the mat as is well known. It is preferred that the

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majority of the glass fibers have diameters in the range of less than 1 up to 23 microns or higher, with the major portion of the fiber being preferably in the range of about 6 to 19 microns and most preferably in the range of about 8 to 16 microns. ... Normally the glass fibers used all have about the same target length, such as 0.25, 0.5, 0.75, 1 or 1.25 inch, but fibers of different lengths and different average diameters can also be used to get different characteristics in a known manner. ... Generally the longer the fiber, the higher the tensile and tear strengths of the mat, but the poorer the fiber dispersion.”

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined teachings of Thomas et al., Cordova et al., and Gaa et al. to incorporate the teachings of Kajander because, as suggested by Kajander, the glass fibers which can be used to make mats can have various fiber diameters and lengths dependent on the strength and other properties desired in the mat as is well known. In other words, for the desired strength and other properties one of ordinary skill would like to use various fiber diameters and lengths as well as binder content.

**10.** Claims 11, 13, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al., U.S. Patent Application Publication No. 2003/0022583 A1 published January 30, 2003, in view of Cordova et al., U.S. Patent 5,343,796 issued September 6, 1994, and further in view of Gaa et al., U.S. Patent 4,681,802 issued July 21, 1987.

**10-1.** Regarding claims 11 and 20, Thomas et al. disclose a system for designing a fibrous non-woven mat production, the system comprising:

[a processor] to develop a prediction equation to calculate one or more production component values based on a performance characteristic value (Develop regression equations,



paragraph [0093]), wherein the prediction equation is developed from data on a performance characteristic of the mat generated by one or more designed experiments (Evaluation of the effects, paragraph [0090]; Two high performance fibers were evaluated. Kevlar 29, ... with lengths of 3 and 4 inches, paragraph [0082]), [wherein the performance characteristic comprises fiber dispersion]; and

a mat production design for producing the fibrous non-woven mat [comprising glass fiber], the mat production design comprising one or more of the production component values calculated from a desired performance characteristic value input into the prediction equation (to predict ballistic resistance as a function of varying fiber length, ..., paragraph [0093]).

Thomas et al. fail to expressly disclose the fibrous non-woven mat comprising glass fiber. Nevertheless, Thomas et al. suggest the referred fibers can be substituted by any fibers having the desired properties for ballistic resistant purpose.

Cordova et al. disclose an armor system and assert at column 1, lines 58-68, "Ballistic resistant articles such as vests, helmets, hard and soft armor, structural members of helicopters and other military equipment, vehicle panels, briefcases, raincoats and umbrellas containing high strength fibers are known. Fibers conventionally used in these articles include aramid fibers such as poly(p-phenylene terephthalamide), graphite fibers, nylon fibers, ceramic fibers, high strength polyethylene fibers, e.g., SPECTRA.RTM., *glass fibers* and the like. For many applications, such as vests or parts of vests, the fibers are used in a woven or knitted fabric."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Thomas et al. to incorporate the teachings of Cordova et al. because, as suggested by Thomas et al., the referred fibers can be substituted by any fibers

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having the desired properties for ballistic resistant purpose and, as asserted by Cordova et al., glass fibers are conventionally used in the ballistic resistant articles.

Thomas et al. also fail to expressly disclose wherein the performance characteristic comprises fiber dispersion.

Gaa et al. disclose at column 2, lines 44-47, “The uniformity of the arrangement of chopped glass fibers and/or strands in the nonwoven, sheet-like mat of chopped glass fibers and/or strands contributes to the strength of the mat and to the ultimate end product.” In other words, fiber dispersion (i.e., the uniformity of the arrangement of chopped glass fibers) will affect the performance of the mat (i.e., contributes to the strength of the mat).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Thomas et al. to also incorporate the teachings of Gaa et al. (i.e., to consider the performance data of fiber dispersion in developing the prediction equation for a performance characteristic) because, as suggested by Gaa et al., fiber dispersion (i.e., the uniformity of the arrangement of chopped glass fibers) will affect the performance of the mat (i.e., contributes to the strength of the mat).

Furthermore, Thomas et al. fail to expressly disclose using a processor or a computer to develop the prediction equation. Nevertheless, Thomas et al. suggest using regression analysis (paragraphs [0080], [0085], [0093], and [0125]) and statistical design method (paragraph [0097]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined teachings of Thomas et al., Cordova et al., and Gaa et al. to use a computer to develop the prediction equation via the suggested regression analysis and

statistical design method to obtain the invention as specified in claims 11 and 20 because using computer for regression analysis is much efficient.

**10-2.** Regarding claim 13, Thomas et al. further disclose wherein the one or more production component values are selected from the group consisting of a materials characteristic and a production characteristic (Two high performance fibers were evaluated. Kevlar 29, ... with lengths of 3 and 4 inches, paragraph [0082]).

**10-3.** Regarding claim 19, Thomas et al. further disclose wherein the prediction equation is developed using a regression analysis (Develop regression equations, paragraph [0093]).

**11.** Claims 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Thomas et al., U.S. Patent Application Publication No. 2003/0022583 A1 published January 30, 2003, Cordova et al., U.S. Patent 5,343,796 issued September 6, 1994, and Gaa et al., U.S. Patent 4,681,802 issued July 21, 1987, as applied to claim 11, in view of Kajander, U.S. Patent 5,837,620 issued November 17, 1998.

**11-1.** Regarding claims 14-18, Thomas et al. fail to expressly disclose wherein the mat comprise binder content and details of glass fiber and binder content. Nevertheless, Thomas et al. suggest the referred fibers can be substituted by any fibers having the desired properties for ballistic resistant purpose.

Kajander discloses a fiber glass mat and suggests at the first paragraph of the detailed description of the invention, "Mats of the present invention contain about 25-75 weight percent fibers and about 15-75 percent binder. The majority of the fibers are glass fibers. The glass fibers which can be used to make mats can have various fiber diameters and lengths dependent on the strength and other properties desired in the mat as is well known. It is preferred that the

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majority of the glass fibers have diameters in the range of less than 1 up to 23 microns or higher, with the major portion of the fiber being preferably in the range of about 6 to 19 microns and most preferably in the range of about 8 to 16 microns. ... Normally the glass fibers used all have about the same target length, such as 0.25, 0.5, 0.75, 1 or 1.25 inch, but fibers of different lengths and different average diameters can also be used to get different characteristics in a known manner. ... Generally the longer the fiber, the higher the tensile and tear strengths of the mat, but the poorer the fiber dispersion.”

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined teachings of Thomas et al., Cordova et al., and Gaa et al. to incorporate the teachings of Kajander to obtain the invention as specified in claims 13-18 because, as suggested by Kajander, the glass fibers which can be used to make mats can have various fiber diameters and lengths dependent on the strength and other properties desired in the mat as is well known. In other words, for the desired strength and other properties one of ordinary skill would like to use various fiber diameters and lengths as well as binder content.

**12.** Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas et al., U.S. Patent Application Publication No. 2003/0022583 A1 published January 30, 2003, in view of Cordova et al., U.S. Patent 5,343,796 issued September 6, 1994, and further in view of Gaa et al., U.S. Patent 4,681,802 issued July 21, 1987, and Kajander, U.S. Patent 5,837,620 issued November 17, 1998.

**12-1.** Regarding claim 21, Thomas et al. disclose a method for designing a fibrous non-woven mat production, the method comprising:

selecting physical characteristics for at least some components to be included in the mat (as a function of varying fiber length, paragraph [0093]), [wherein the components include glass fibers and binder, and wherein the physical characteristics include length and diameters of the glass fiber and content, by percentage weight, of the binder];

obtaining empirical performance data relating to the mat based on the selected physical characteristics (Evaluation of the effects, paragraph [0090]; Two high performance fibers were evaluated. Kevlar 29, ... with lengths of 3 and 4 inches, paragraph [0082]), [wherein the empirical performance data comprises fiber dispersion];

developing a prediction equation for a performance characteristic of the mat based on the empirical performance data and selected the physical characteristics (Develop regression equations, paragraph [0093]);

calculating performance characteristics using the prediction equation, wherein ranges of at least some of the selected physical characteristics are used in the prediction equation (to predict ballistic resistance as a function of varying fiber length, ..., paragraph [0093]); and

selecting components for the mat based on the calculated performance characteristics (The high modulus fiber blend is advantageous in that the fiber only deformed the  $\frac{3}{4}$  inches prior to stopping the projectile in comparison to the  $2\frac{3}{4}$  inch penetration of the Kevlar, paragraph [0136]).

Thomas et al. fail to expressly disclose wherein the components include glass fibers. Nevertheless, Thomas et al. suggest the referred fibers can be substituted by any fibers having the desired properties for ballistic resistant purpose.

Cordova et al. disclose an armor system and assert at column 1, lines 58-68, “Ballistic resistant articles such as vests, helmets, hard and soft armor, structural members of helicopters and other military equipment, vehicle panels, briefcases, raincoats and umbrellas containing high strength fibers are known. Fibers conventionally used in these articles include aramid fibers such as poly(p-phenylene terephthalamide), graphite fibers, nylon fibers, ceramic fibers, high strength polyethylene fibers, e.g., SPECTRA.RTM., *glass fibers* and the like. For many applications, such as vests or parts of vests, the fibers are used in a woven or knitted fabric.”

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Thomas et al. to incorporate the teachings of Cordova et al. because, as suggested by Thomas et al., the referred fibers can be substituted by any fibers having the desired properties for ballistic resistant purpose and, as asserted by Cordova et al., glass fibers are conventionally used in the ballistic resistant articles.

Thomas et al. also fail to expressly disclose wherein the components include binder, and wherein the physical characteristics include length and diameters of the glass fiber and content, by percentage weight, of the binder.

Kajander discloses a fiber glass mat and suggests at the first paragraph of the detailed description of the invention, “Mats of the present invention contain about 25-75 weight percent fibers and about 15-75 percent binder. The majority of the fibers are glass fibers. The glass fibers which can be used to make mats can have various fiber diameters and lengths dependent on the strength and other properties desired in the mat as is well known. It is preferred that the majority of the glass fibers have diameters in the range of less than 1 up to 23 microns or higher, with the major portion of the fiber being preferably in the range of about 6 to 19 microns and

most preferably in the range of about 8 to 16 microns. ... Normally the glass fibers used all have about the same target length, such as 0.25, 0.5, 0.75, 1 or 1.25 inch, but fibers of different lengths and different average diameters can also be used to get different characteristics in a known manner. ... Generally the longer the fiber, the higher the tensile and tear strengths of the mat, but the poorer the fiber dispersion.”

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined teachings of Thomas et al. and Cordova et al. to incorporate the teachings of Kajander because, as suggested by Kajander, the glass fibers which can be used to make mats can have various fiber diameters and lengths dependent on the strength and other properties desired in the mat as is well known. In other words, for the desired strength and other properties one of ordinary skill would like to use various fiber diameters and lengths as well as binder content.

Furthermore, Thomas et al. fail to expressly disclose wherein the empirical performance data comprises fiber dispersion.

Gaa et al. disclose at column 2, lines 44-47, “The uniformity of the arrangement of chopped glass fibers and/or strands in the nonwoven, sheet-like mat of chopped glass fibers and/or strands contributes to the strength of the mat and to the ultimate end product.” In other words, fiber dispersion (i.e., the uniformity of the arrangement of chopped glass fibers) will affect the performance of the mat (i.e., contributes to the strength of the mat).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Thomas et al. to also incorporate the teachings of Gaa et al. (i.e., to consider the performance data of fiber dispersion in developing the prediction equation

for a performance characteristic) because, as suggested by Gaa et al., fiber dispersion (i.e., the uniformity of the arrangement of chopped glass fibers) will affect the performance of the mat (i.e., contributes to the strength of the mat).

### ***Applicants' Arguments***

**13.** Applicants argue the following:

**13-1.** The Amendment Moots the Objection and Indefiniteness Rejection of the Claims

(1) "The objection to claim 1, and the rejection of claims 1-10 and 21 under 35 U.S.C. § 112, second paragraph, are made moot by the Amendment." (Page 6, paragraph 3, Amendment)

**13-2.** The Rejections Under § 103(a) Are Addressed

(2) "Claims 1 and 11 have been amended to specify that fiber dispersion is part of the empirical performance data or a performance characteristic used in the mat design methods. In addition, claims 1, 11, and 21 are amended to clarify that dispersion refers to "fiber dispersion," which is the degree of separation of glass fiber bundles into individual filaments during a manufacturing process (see Specification, p. 5, 11. 14-15)." (Page 7, paragraph 1, Amendment)

(3) "Thomas' failure to use fiber dispersion to help design a fibrous, non-woven mat is not remedied by the secondary references. Neither of these references use fiber dispersion in a prediction equation that helps design the production of a fibrous non-woven mat. Thus, the claims are allowable over the cited references, as well as their dependent claims." (Page 7, paragraph 3, Amendment)



***Response to Arguments***

**14.** Applicants' arguments have been fully considered.

**14-1.** Applicants' argument (1) regarding the rejections of claims 1-10 and 21 is not persuasive.

The rejections of claims 1-10 and 21 under 35 U.S.C. 112, second paragraph, in Office Action dated November 26, 2007, are maintained because the components to be included in the mat are already known in the "selecting (various) physical characteristics" step. The objection to claim 1 in Office Action dated November 26, 2007, has been withdrawn.

**14-2.** Applicants' arguments (2)-(3) are moot in view of the new ground(s) of rejection as detailed in paragraphs 8 to 12-1 above. The rejections of claims 1-21 under 35 U.S.C. 103(a) in Office Action dated November 26, 2007, have been withdrawn.

***Conclusion***

**15.** Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Herng-der Day whose telephone number is (571) 272-3777. The Examiner can normally be reached on 9:00 - 17:30.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: (571) 272-2100.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kamini S. Shah can be reached on (571) 272-2279. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Herng-der Day/  
Examiner, Art Unit 2128

March 20, 2008

/Kamini S Shah/  
Supervisory Patent Examiner, Art Unit 2128